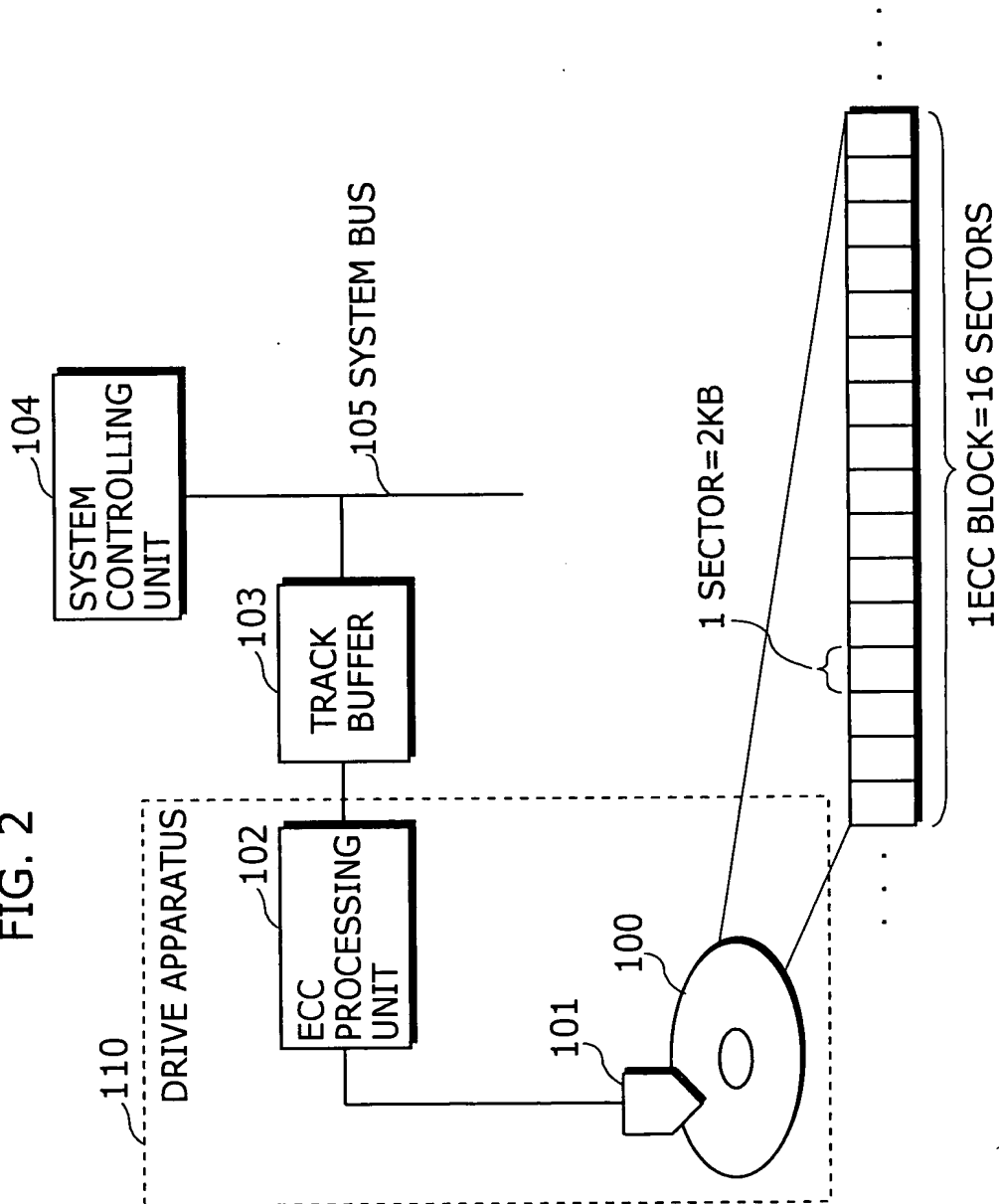


FIG. 2



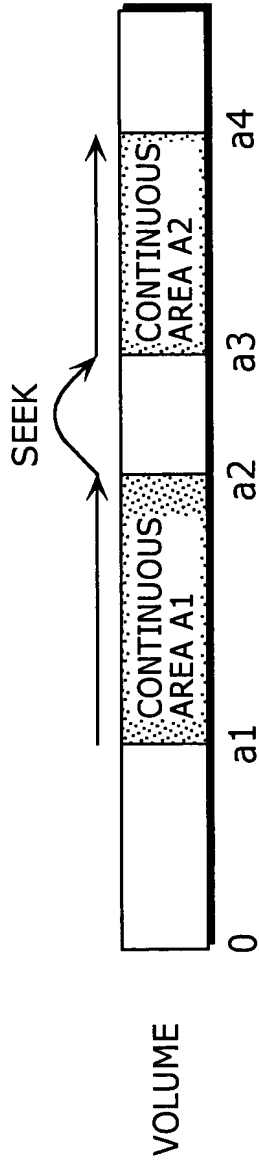
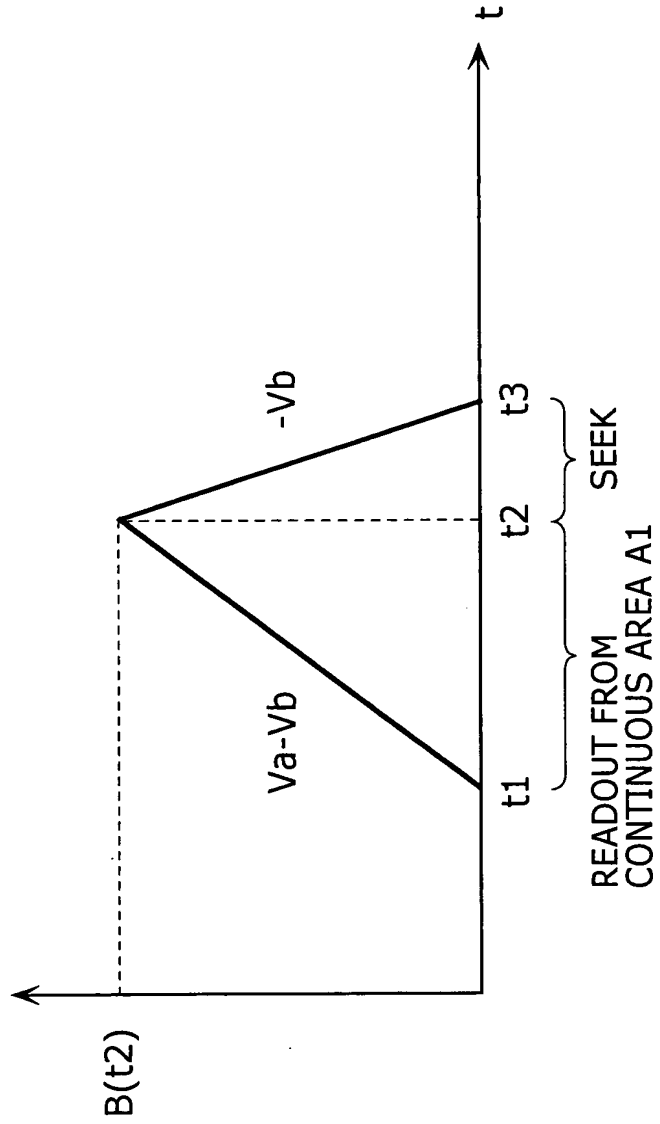


FIG. 3B

B ACCUMULATED VOLUME OF DATA IN TRACK BUFFER



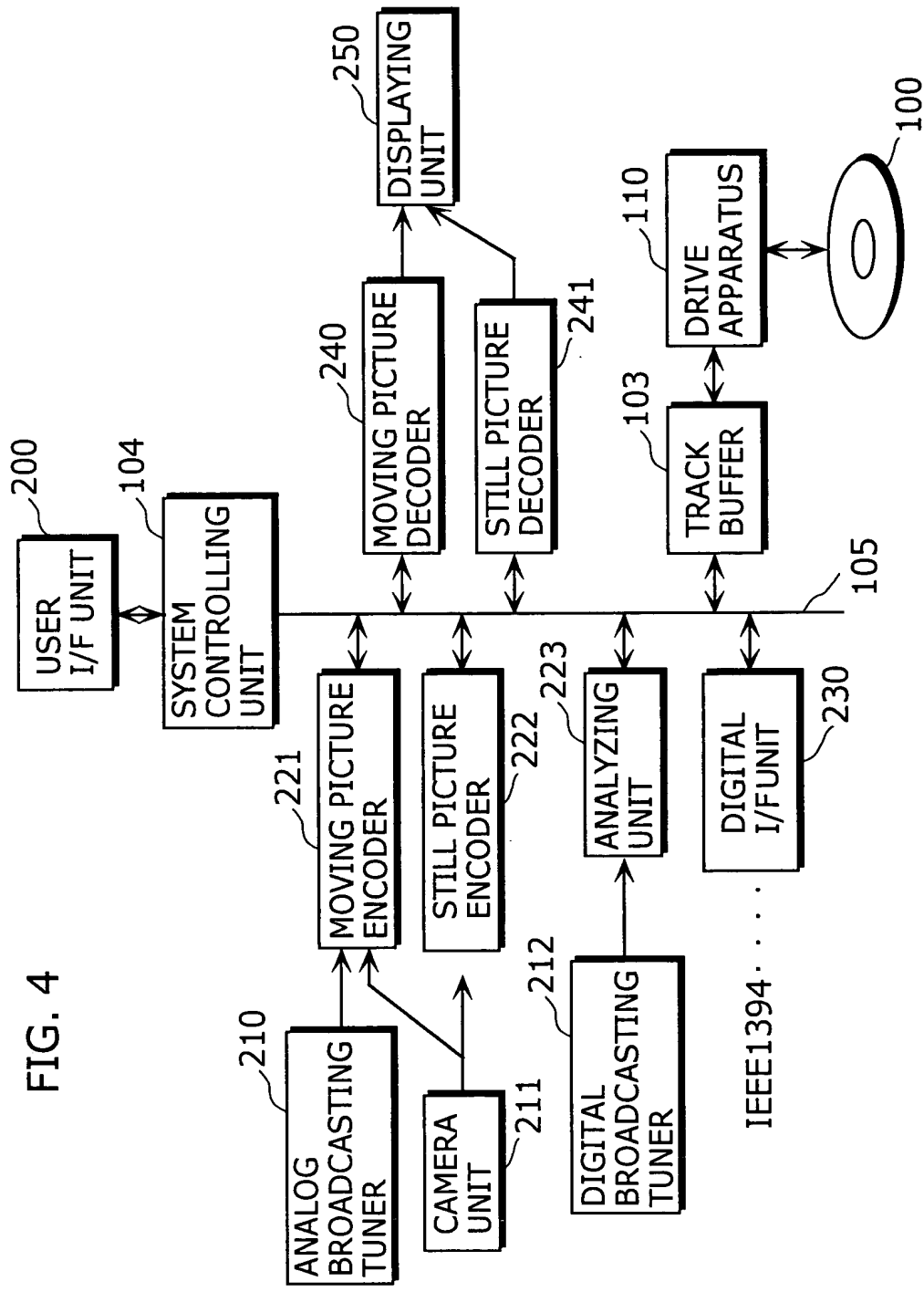


FIG. 4

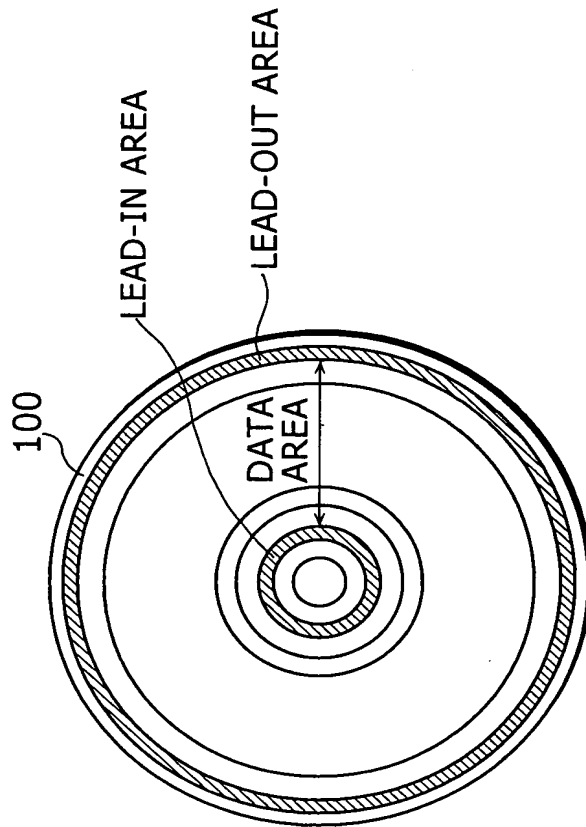


FIG. 5A

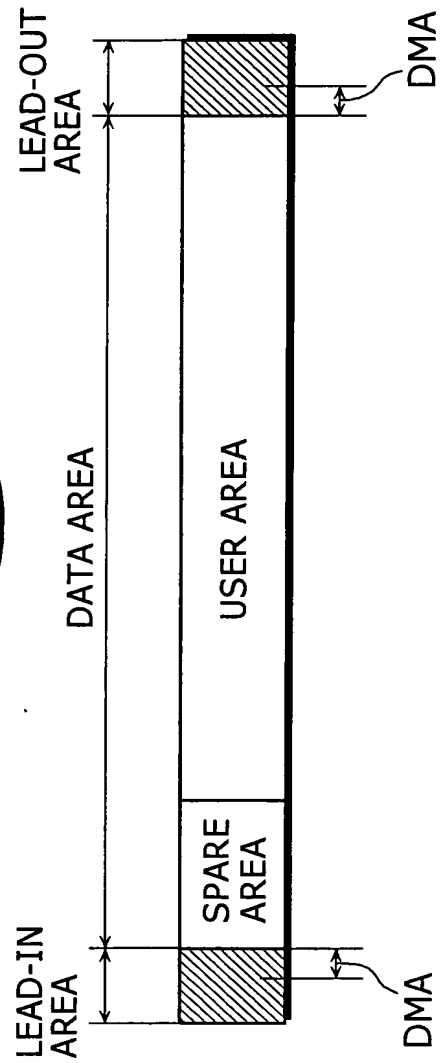


FIG. 5B

FIG. 6A

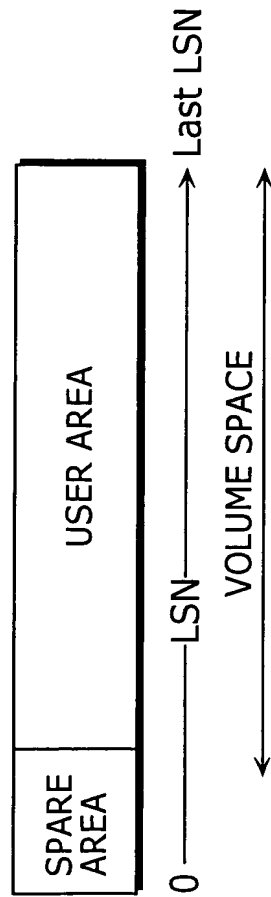
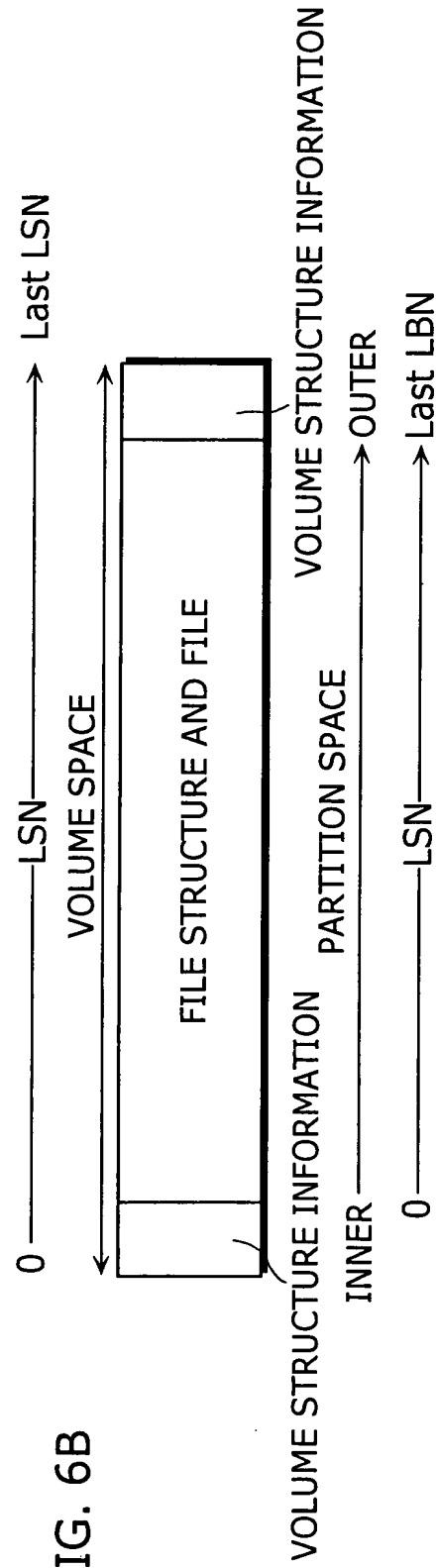


FIG. 6B



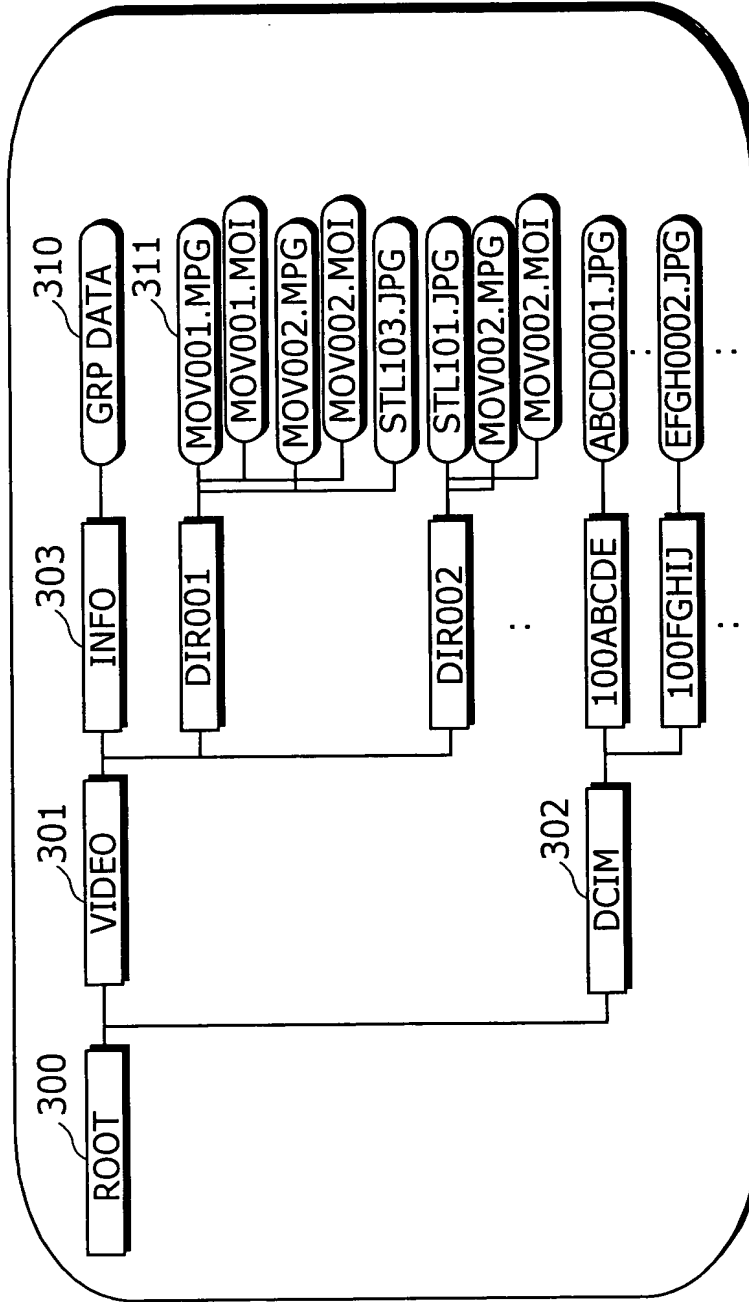


FIG. 7A

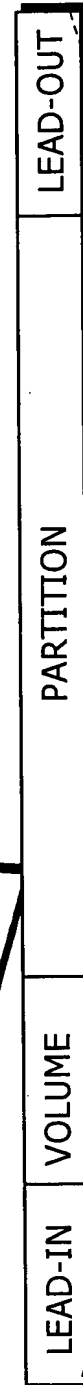


FIG. 7B

FIG. 8

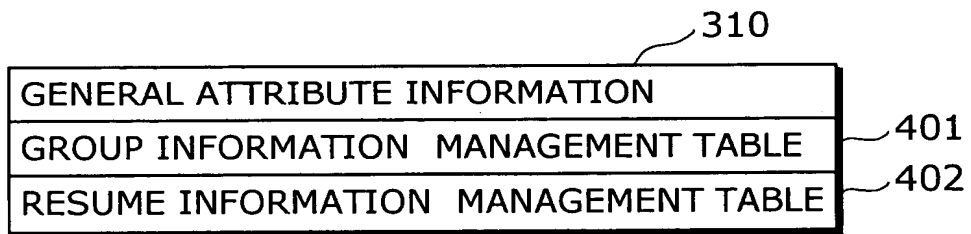


FIG. 9

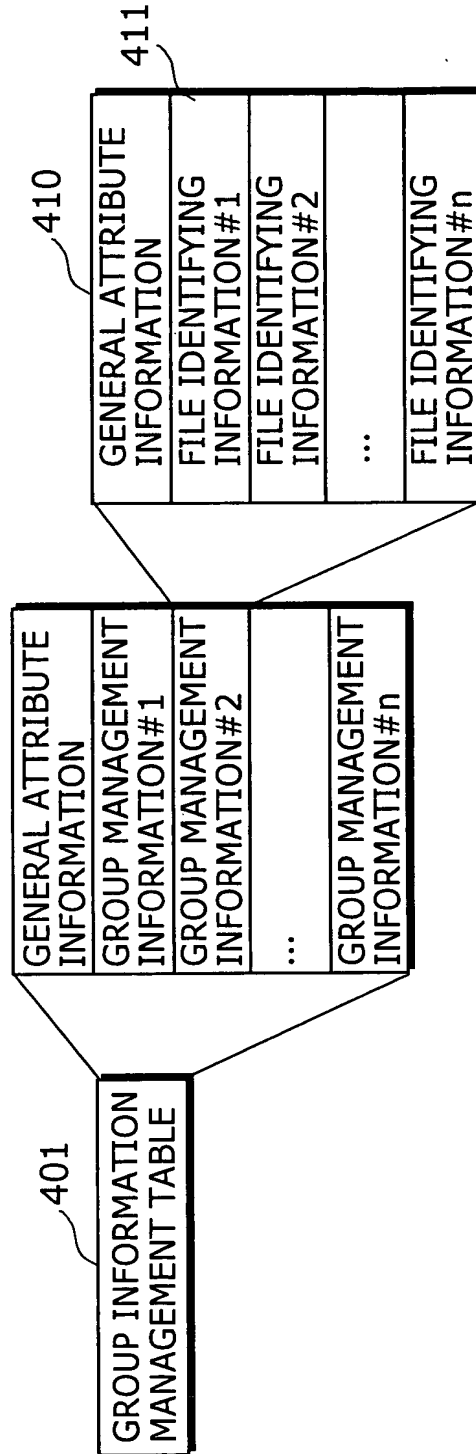


FIG. 10

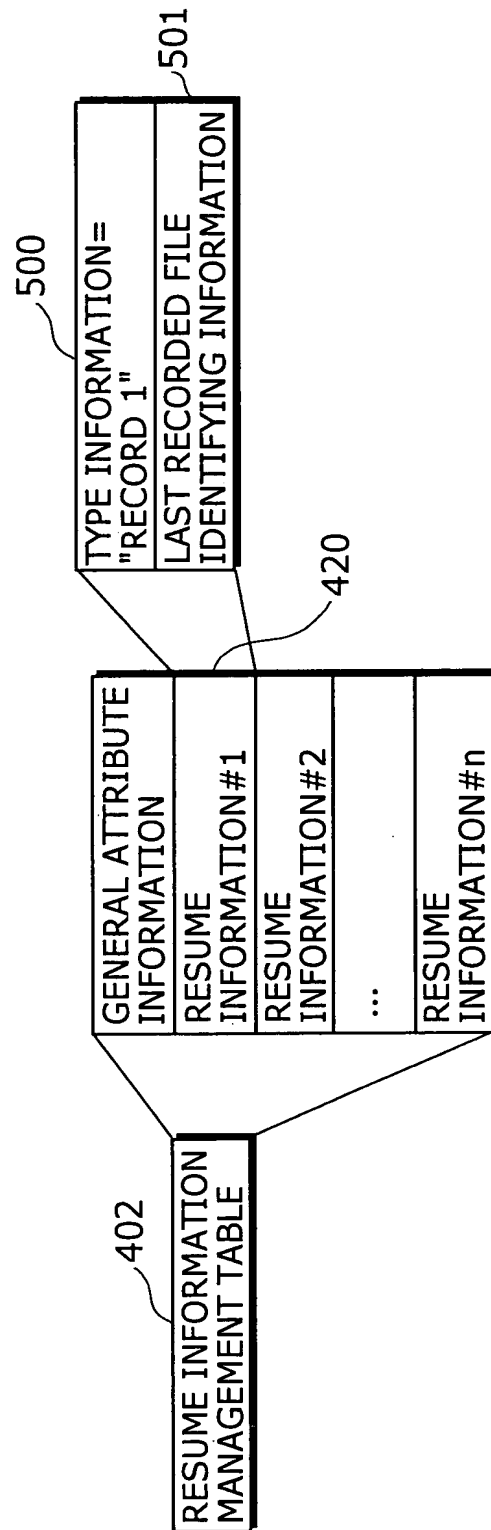


FIG. 11A

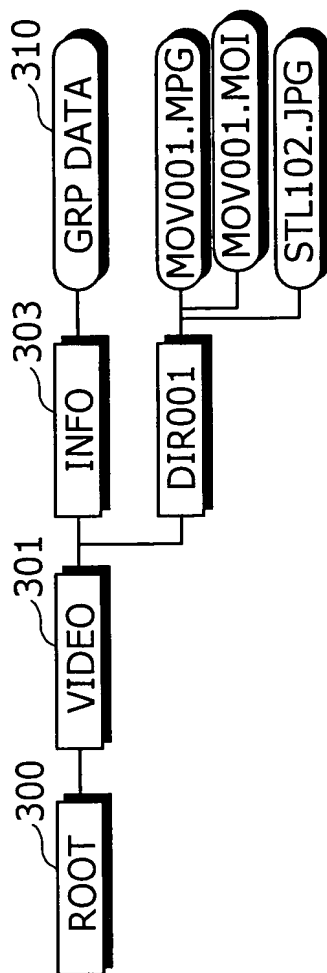


FIG. 11B

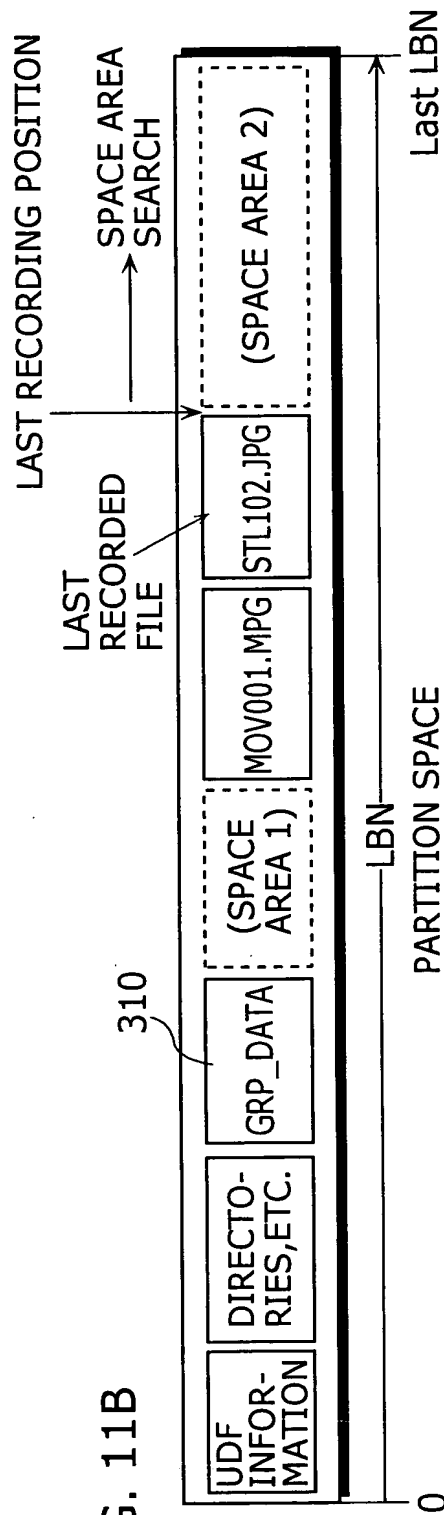


FIG. 12A

410a

ENTRY	VALUE
GENERAL ATTRIBUTE INFORMATION	NUMBER OF SETS OF FILE IDENTIFYING INFORMATION=2 CORRESPONDING DIRECTORY="/VIDEO/DIR001" ...
FILE IDENTIFYING INFORMATION#1	"/VIDEO/DIR001/MOV001.MPG"
FILE IDENTIFYING INFORMATION#2	"/VIDEO/DIR001/STL002.JPG"

FIG. 12B

500a

ENTRY	VALUE
TYPE INFORMATION	"RECORD 1"
LAST RECORDED FILE IDENTIFYING INFORMATION	"/VIDEO/DIR001/STL002.JPG"

```

graph TD
    300[ROOT] --> 301[VIDEO]
    301 --> 303[INFO]
    303 --> 310[GRP DATA]
    303 --> DIR001[DIR001]
    DIR001 --> MOV001.MPG
    DIR001 --> MOV001.MOI
    DIR001 --> STL102.JPG
    DIR001 --> STL103.JPG
  
```

Diagram illustrating a file system structure (Fig. 13B) showing a sequence of files and directories. The files are: UDF INFORMATION, DIRECTORIES, ETC., GRP_DATA, (SPACE AREA 1), MOV001.MPG, STL102.JPG, STL103.JPG, and (SPACE AREA 2). The diagram shows the 'LAST RECORDED FILE' as STL103.JPG and the 'LAST RECORDING POSITION' as the end of the sequence. The 'SPACE AREA SEARCH' is indicated by an arrow pointing to the end of the sequence. The 'PARTITION SPACE' is the total length of the sequence, and the 'Last LBN' is the last logical block number.

FIG. 14A

ENTRY	VALUE
GENERAL ATTRIBUTE INFORMATION	NUMBER OF SETS OF FILE IDENTIFYING INFORMATION=2 CORRESPONDING DIRECTORY="/VIDEO/DIR001" ...
FILE IDENTIFYING INFORMATION #1	"/VIDEO/DIR001/MOV001.MPG"
FILE IDENTIFYING INFORMATION #2	"/VIDEO/DIR001/STL002.JPG"
FILE IDENTIFYING INFORMATION #3	"/VIDEO/DIR001/STL003.JPG"

PLAYBACK SEQUENCE →

FIG. 14B

ENTRY	VALUE
TYPE INFORMATION	"RECORD"
LAST RECORDED FILE IDENTIFYING INFORMATION	"/VIDEO/DIR001/STL003.JPG"

FIG. 15

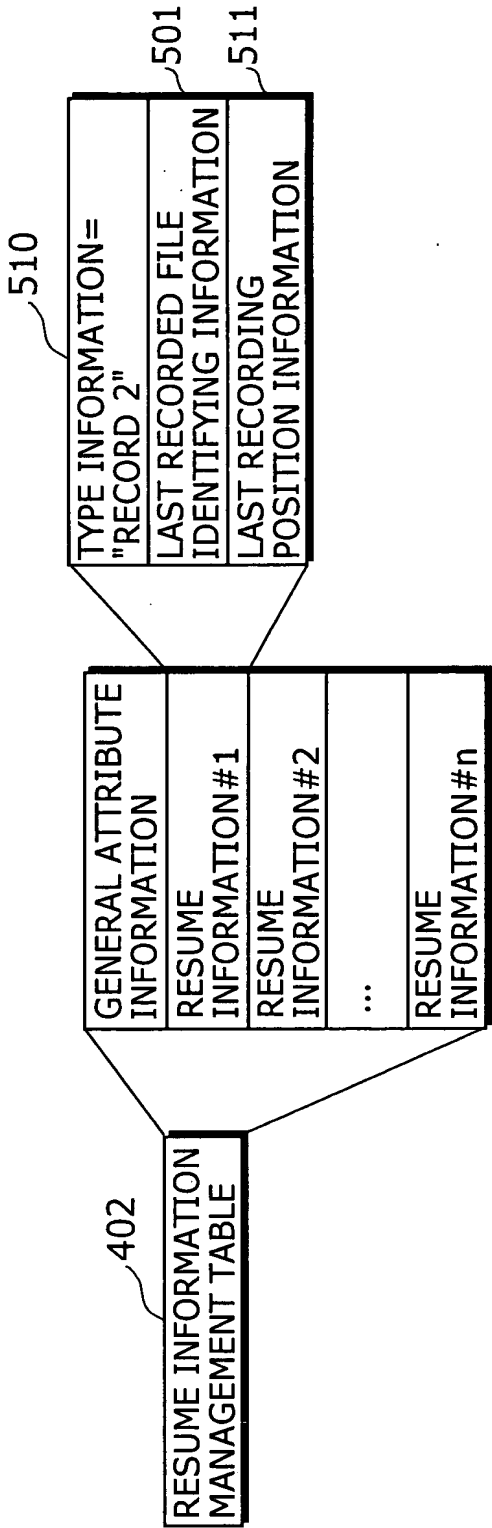


FIG. 16

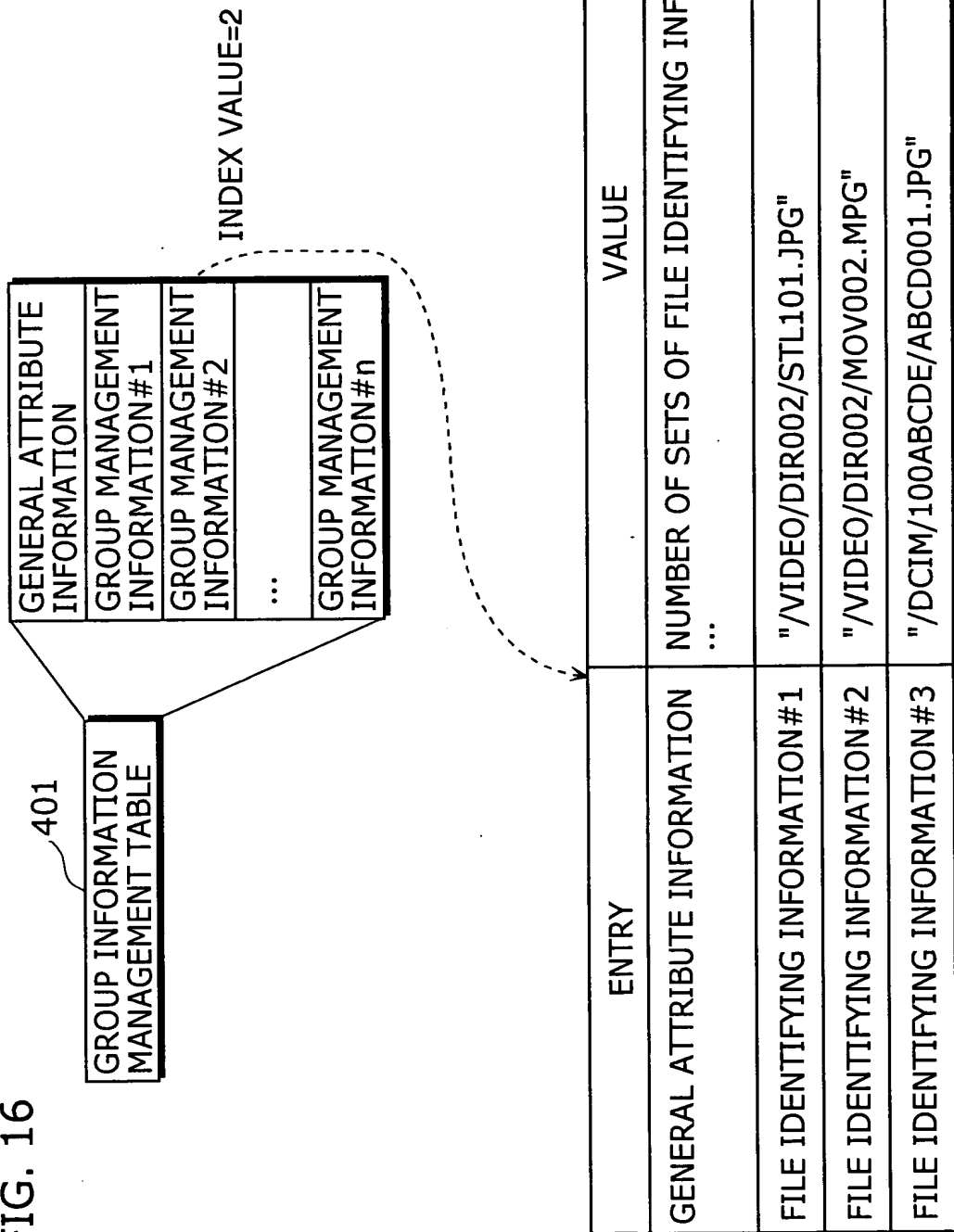


FIG. 17

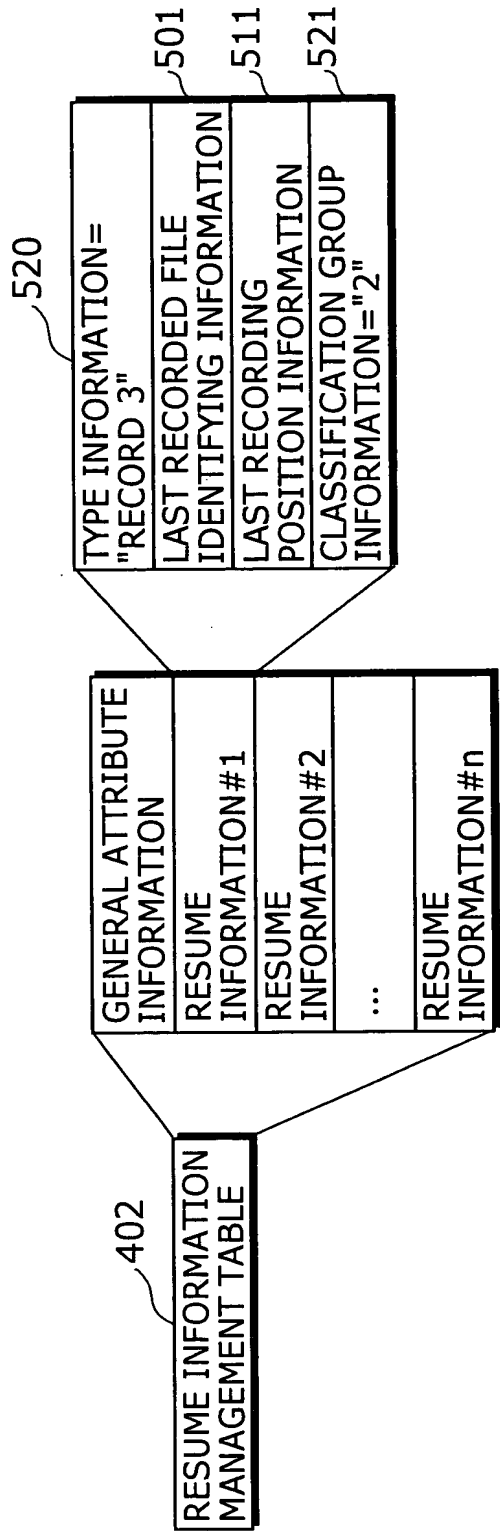


FIG. 18

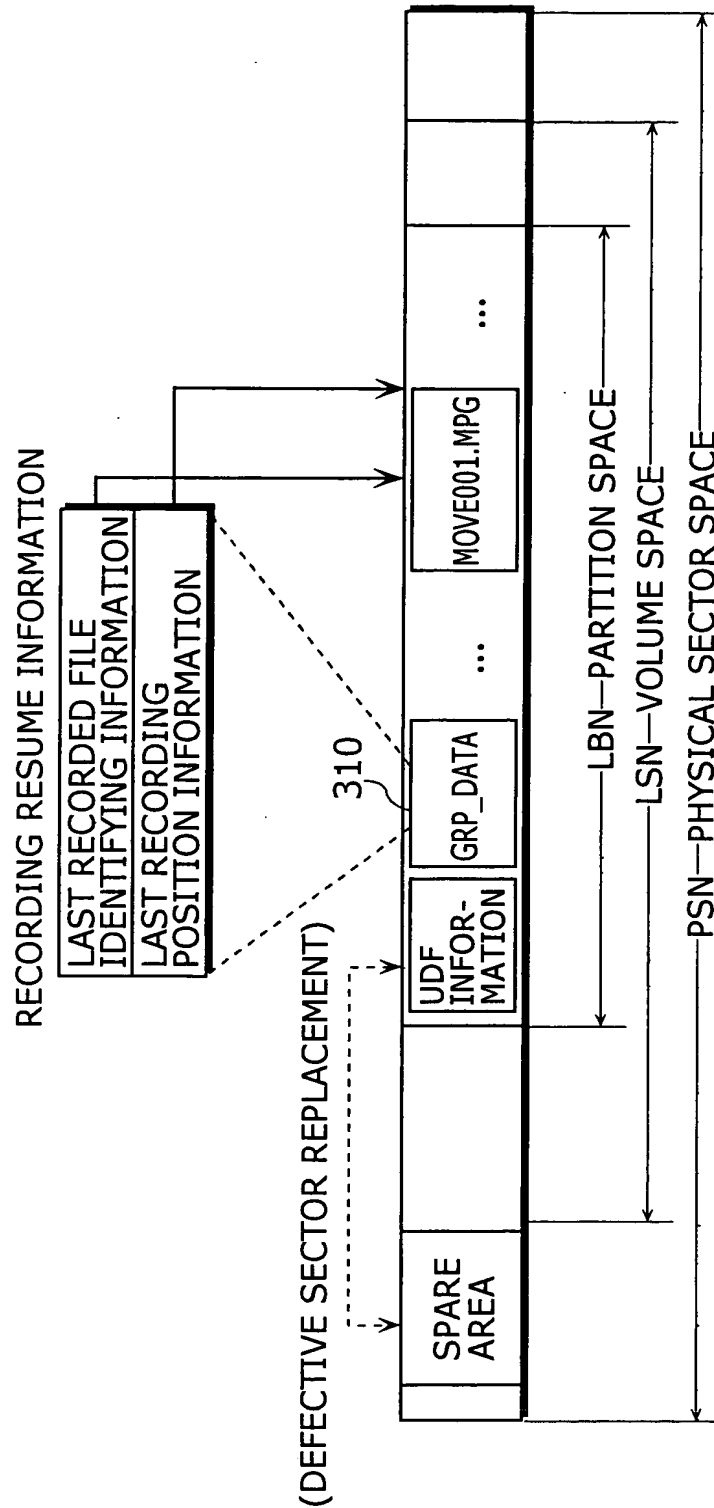


FIG. 19

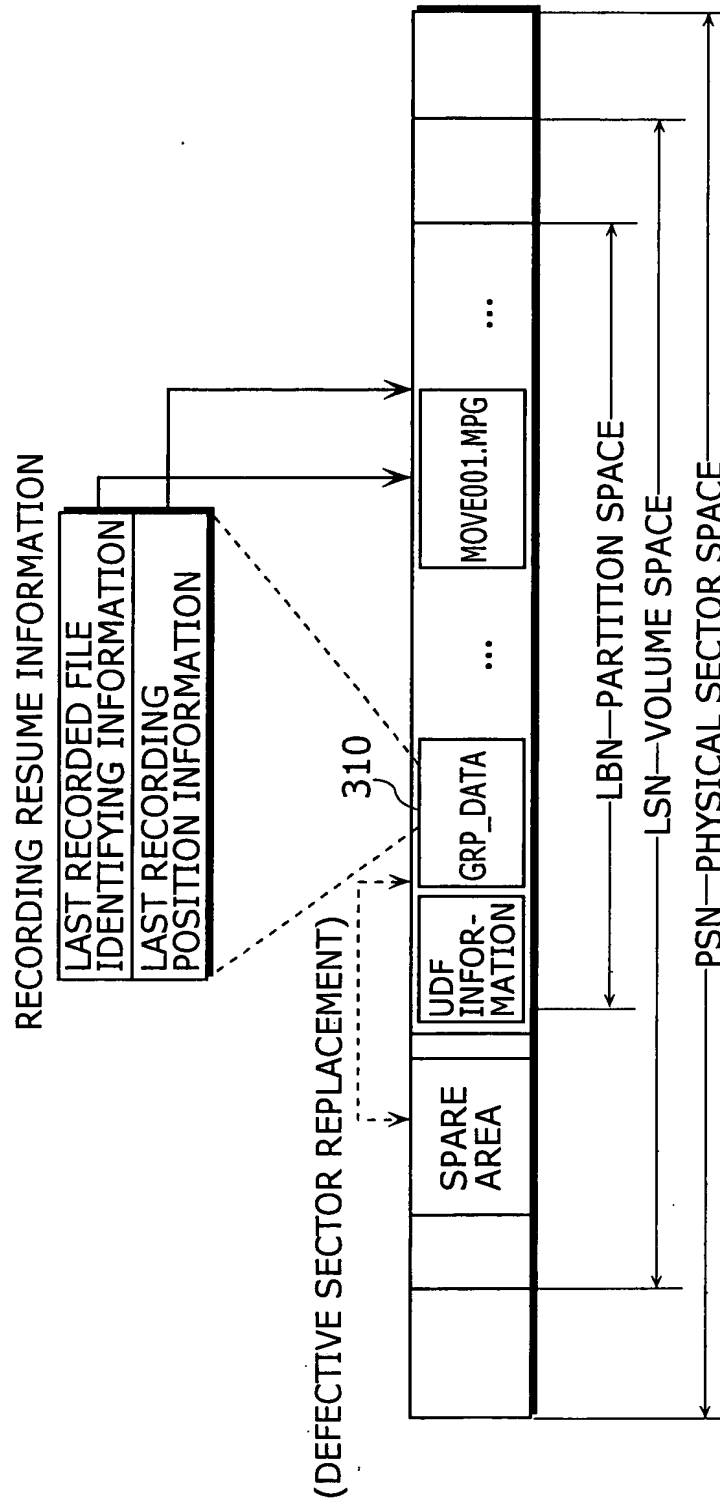
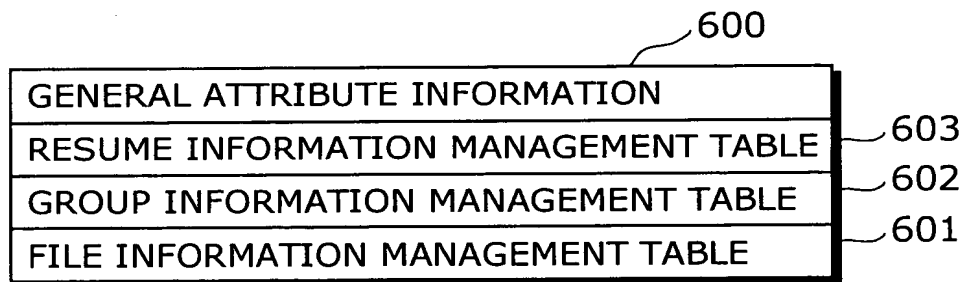


FIG. 20



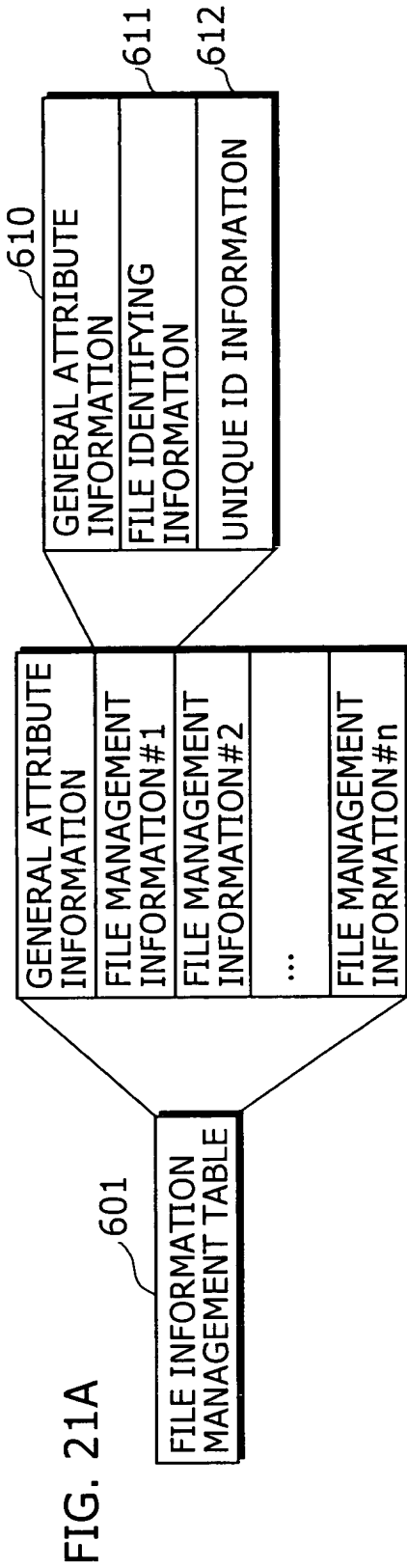


FIG. 21B

ENTRY	VALUE OF FILE IDENTIFYING INFORMATION	VALUE OF UNIQUE ID INFORMATION
FILE IDENTIFYING INFORMATION #1	"/VIDEO/DIR002/STL101.JPG"	1
...
FILE IDENTIFYING INFORMATION #5	"/VIDEO/DIR002/MOV002.MPG"	10
...
FILE IDENTIFYING INFORMATION #19	"/DCIM/100ABCDE/ABCD0001.JPG"	5
FILE IDENTIFYING INFORMATION #20	"/DCIM/100ABCDE/ABCD0002.JPG"	20

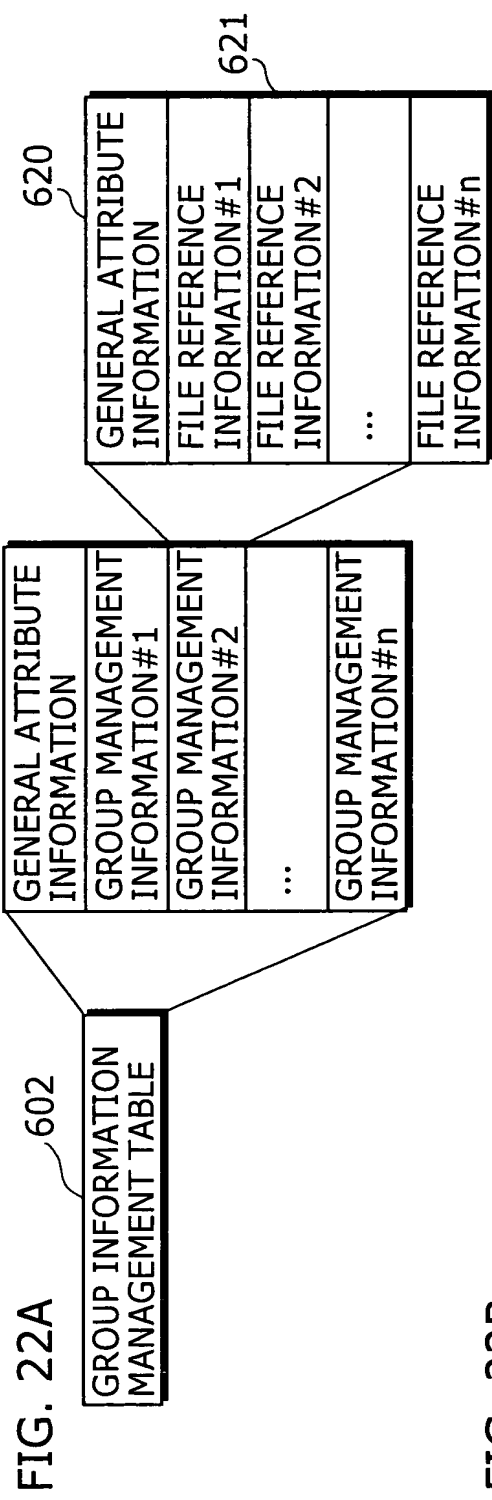


FIG. 22B

ENTRY	VALUE
GENERAL ATTRIBUTE INFORMATION	NUMBER OF SETS OF FILE REFERENCE INFORMATION=3 ...
FILE IDENTIFYING INFORMATION#1	1
FILE IDENTIFYING INFORMATION#2	10
FILE IDENTIFYING INFORMATION#3	5

FIG. 23

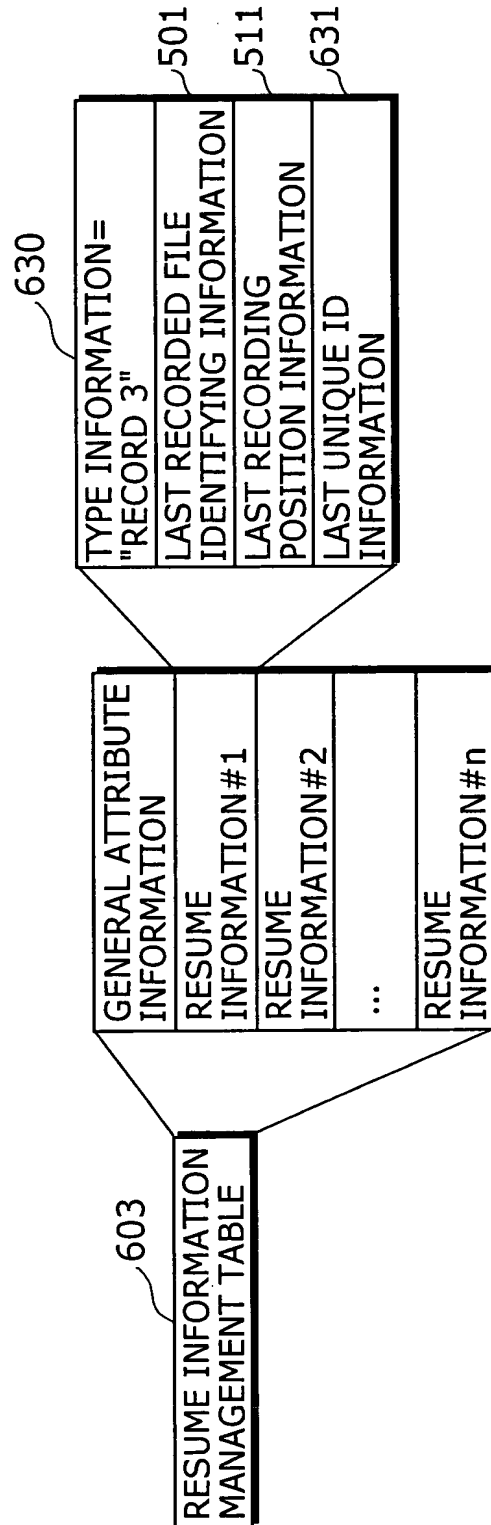
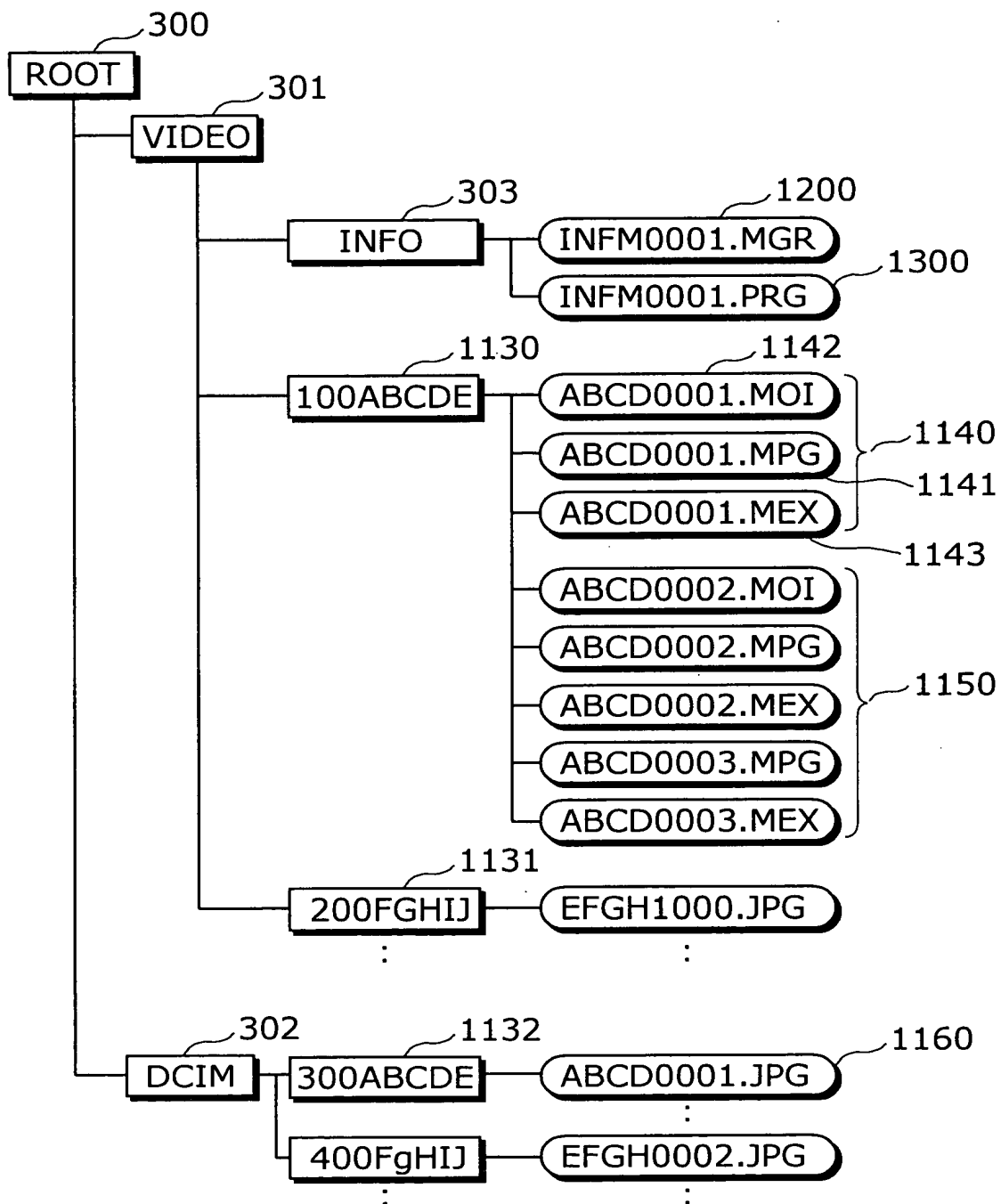


FIG. 24



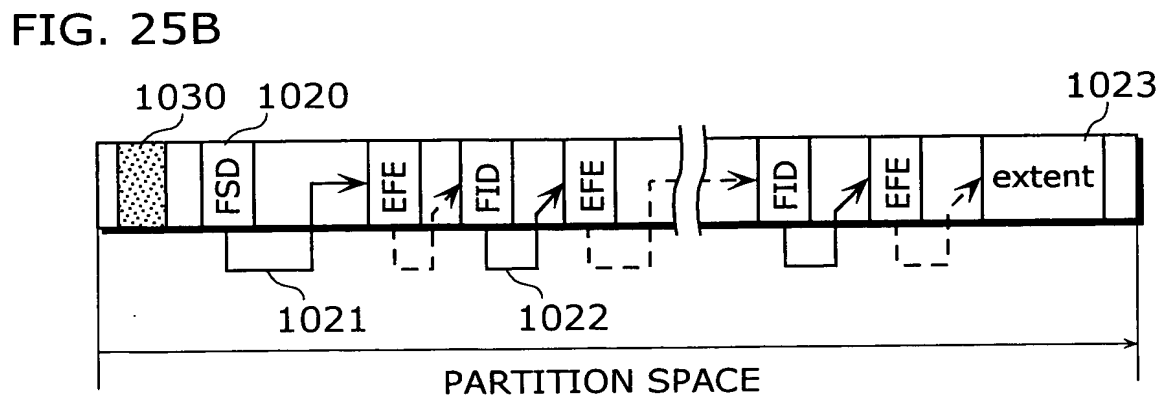
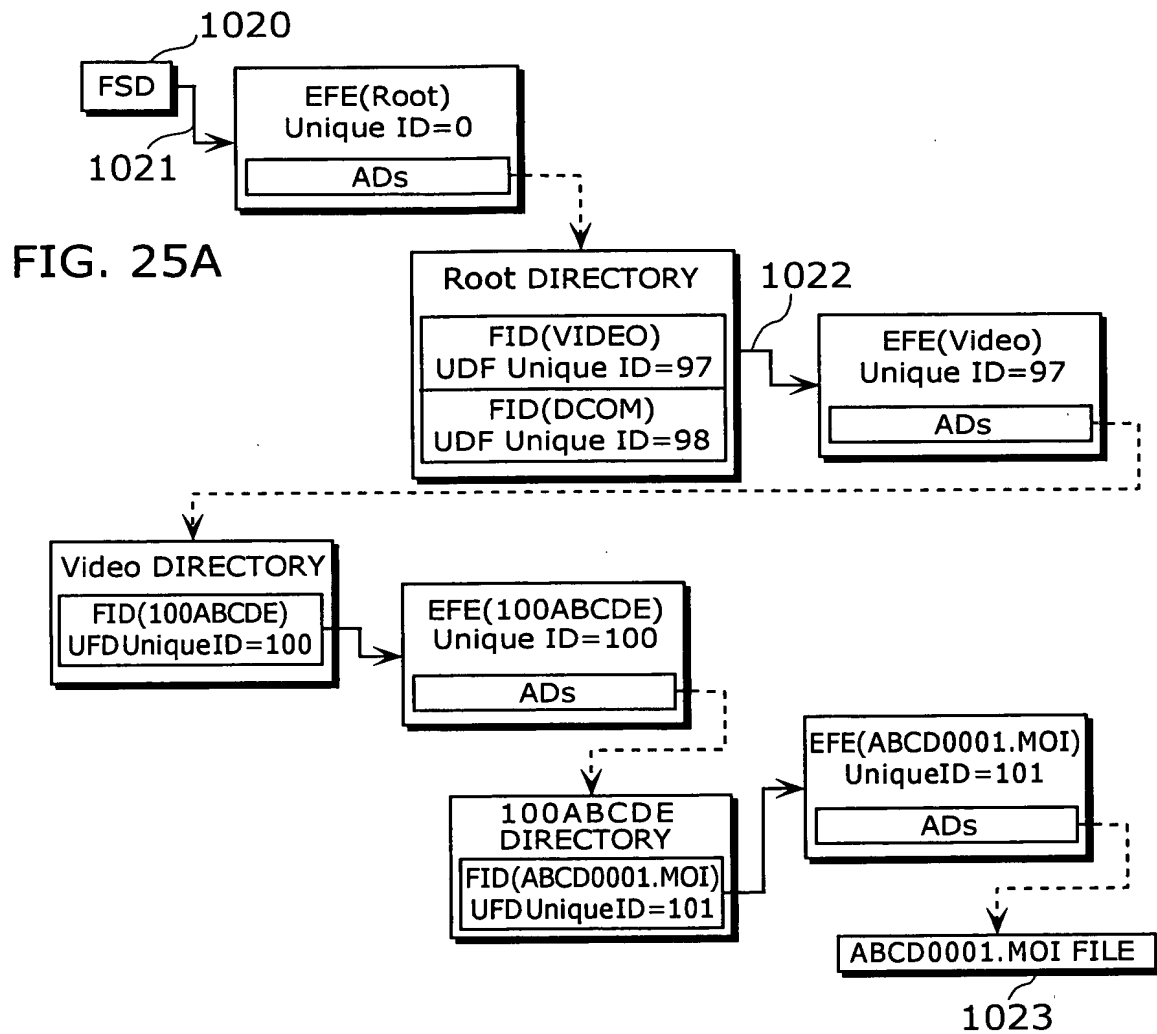


FIG. 26A

FSD1020

BP	LENGTH	FIELD NAME	CONTENTS
0	16	Descriptor Tag	Tag
...
400	16	Root Directory ICB	long_ad
...
464	16	System Stream Directory ICB	long_ad
...

FIG. 26B

long_ad

RBP	LENGTH	FIELD NAME	CONTENTS
0	4	Extent Length	Uint32
4	6	Extent Location	Ib_addr
10	6	Implementation Use	byte

FIG. 26C

ADImpUse

BP	LENGTH	FIELD NAME	CONTENTS
0	2	Flags	Uint16
2	4	UDF Unique ID	Uint32

FIG. 27A

Extended File Entry(EFE) 1100

BP	LENGTH	FIELD NAME	CONTENTS
0	16	Descriptor Tag	Tag
...
152	16	Stream Directory ICB	long_ad
...
200	8	Unique ID	Uint64
208	4	Length of Extended Attribute(=L_EA)	Uint32
212	4	Length of Allocation Descriptors(=L_D)	Uint32
216	L_EA	Extended Attributes(EAs) ~ 1101	bytes
[L_EA+216]	L_AD	Allocation Descriptors(ADs) ~ 1110	bytes

FIG. 27B

Allocation Descriptor(AD) 1110

RBP	LENGTH	FIELD NAME	CONTENTS
0	4	Extend Length	Uint32
4	4	Extent Position	Uint32

FIG. 27C

FID 1120

RBP	LENGTH	FIELD NAME	CONTENTS
0	16	Descriptor Tag	Tag
...
18	1	File Characteristics	Uint8
19	1	Length of File Identifier(=L_FI)	Uint8
20	16	ICB	long_ad
...
[L_IU+38]	L_FI	File Identifier ~ 1121	d-character
...

FIG. 28

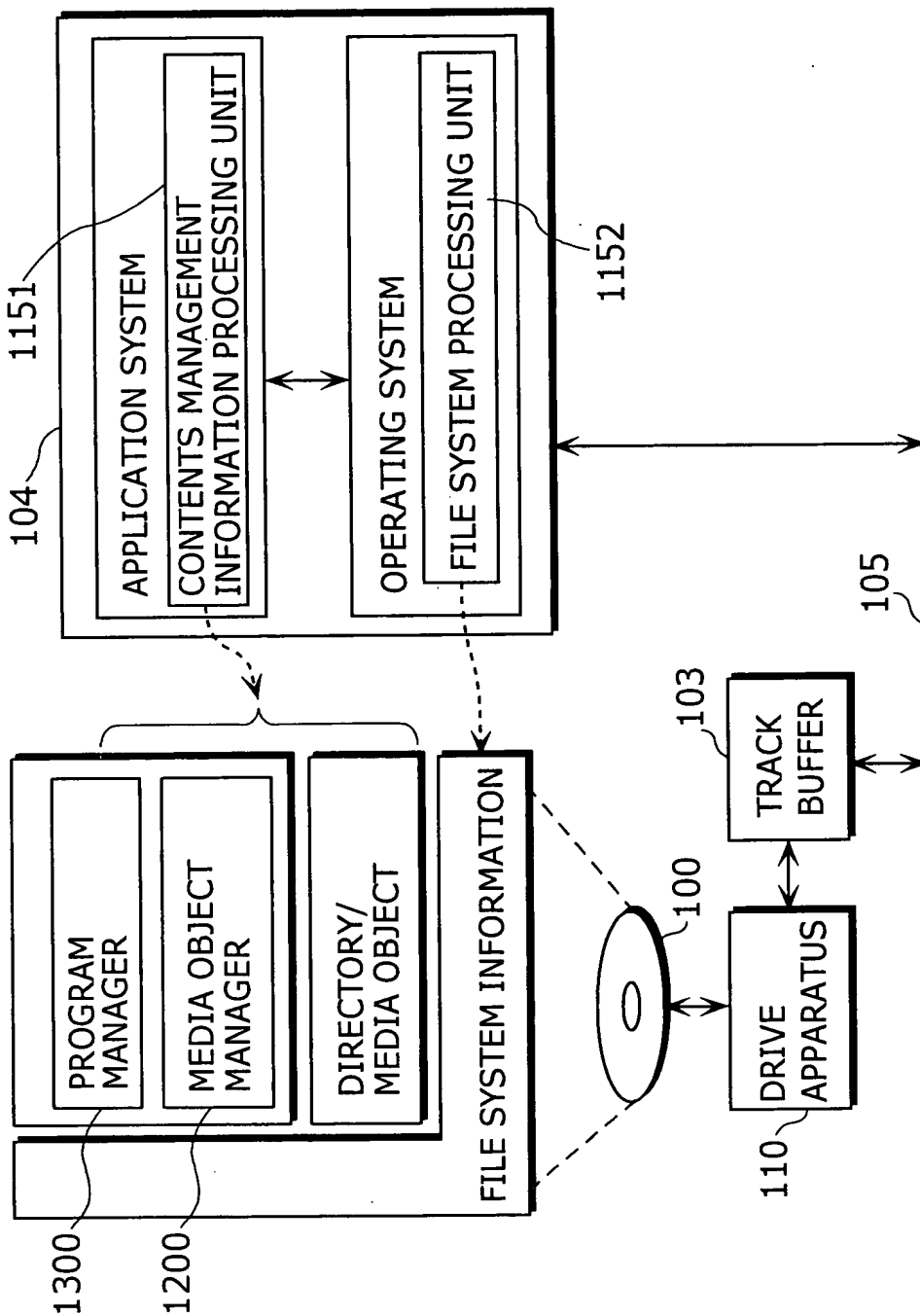


FIG. 29A MEDIA OBJECT MANAGER 1200

FIELD NAME	CONTENTS
const unsigned int(16) DataType	TYPE OF MO_MGR (FIXED VALUE)
unsigned int(16) DataSize	SIZE OF MO_MGR
unsigned int(32) ModTime ~ 1201	UPDATE DATE/TIME INFORMATION
unsigned int(32) PlayBackDuration	TOTAL PLAYBACK TIME LENGTH OF ALL MEDIA OBJECTS(ms)
RESUME_MARK ResumeMark ~ 1210	RECORDING RESUME INFORMATION
unsigned int(16) NumMoInfo	NUMBER OF SETS OF MEDIA OBJECT INFORMATION(MO_INFO)
int i; for(i=0;i<NumMoInfo;i++){ MO_INFO MoInfo ~ 1220 }	MEDIA OBJECT INFORMATION TABLE

FIG. 29B RECORDING RESUME INFORMATION 1210

FIELD NAME	CONTENTS
unsigned int(32) flags ~ 1210a 1211	ATTRIBUTE FLAGS
unsigned int(32) LastMoUniqueID	LAST UNIQUE ID INFORMATION
unsigned int(64) LastRecLBN ~ 1212	LAST RECORDING POSITION INFORMATION
OBJ_ID LastRecMo ~ 1213	LAST RECORDED FILE IDENTIFYING INFORMATION
unsigned int(16) PrgInfoNum ~ 1214	CLASSIFICATION GROUP INFORMATION
unsigned int(32) LastRecTime ~ 1215	RECORDING DATE/TIME INFORMATION

FIG. 29C ATTRIBUTE FLAGS 1210a

FIELD NAME	CONTENTS
LOOP RECORDING FLAG	SHOWING WHETHER LOOP RECORDING WAS EMPLOYED FOR RECORDING LAST RECORDED FILE
FIRST VALID FLAG	SHOWING WHETHER LAST UNIQUE ID INFORMATION 1211 IS VALID
SECOND VALID FLAG	SHOWING WHETHER LAST RECORDING POSITION INFORMATION 1212 IS VALID
THIRD VALID FLAG	SHOWING WHETHER LAST RECORDED FILE IDENTIFYING INFORMATION 1213 IS VALID
FOURTH VALID FLAG	SHOWING WHETHER CLASSIFICATION GROUP INFORMATION 1214 IS VALID
FIFTH VALID FLAG	SHOWING WHETHER RECORDING DATE/TIME INFORMATION 1215 IS VALID

FIG. 30A

MEDIA OBJECT INFORMATION 1220

FIELD NAME	CONTENTS
unsigned int(16) MoType	TYPE OF MEDIA OBJECT
unsigned int(16) Attributes	ATTRIBUTE INFORMATION OF MEDIA OBJECT
OBJ_ID MoRef ~1221	OBJECT REFERENCE INFORMATION
unsigned int(32) MoUniqueID ~1222	MEDIA UNIQUE ID
unsigned int(32) PlayBackDuration	PLAYBACK TIME LENGTH OF MEDIA OBJECTS(ms)
unsigned int(16) TextID	REFERENCE INFORMATION TO REFERENCE TO TEXT INFORMATION
unsigned int(16) ThumID	REFERENCE INFORMATION TO REFERENCE TO REPRESENTATIVE THUMBNAIL IMAGE INFORMATION

FIG. 30B

VALUE OF MoType

VALUE	INTERPRETATION
1	DIRECTORY
2	MOVING PICTURE OBJECT(EXTENSION:MOI)
3	MOVING PICTURE OBJECT(EXTENSION:MPG)
4	MOVING PICTURE OBJECT(EXTENSION:MEX)
5	STILL PICTURE OBJECT(EXTENSION:JPG)
...	...

FIG. 30C

VALUE OF OBJ_ID

BIT	FIELD NAME	INTERPRETATION
b7	ParentDirNo	0:/VIDEO DIRECTORY 1:/DCIM DIRECTORY OTHERS:RESERVED
b6 b4	DirNo	NUMERIC VALUE PART OF NAME OF UPPER DIRECTORY OF MEDIA OBJECT
b3 b0	FileNo	NUMERIC VALUE PART OF FILE NAME OF MEDIA OBJECT

FIG. 31A

PROGRAM MANAGER 1300

FIELD NAME	CONTENTS
const unsigned int(16) DataType	TYPE OF PRG_MGR(FIXED VALUE)
unsigned int(16) DataSize	SIZE OF PRG_MGR
unsigned int(32) PlayBackDuration	TOTAL PLAYBACK TIME LENGTH OF ALL PROGRAM(ms)
unsigned int(16) NumPrgInfo	NUMBER OF SETS OF PROGRAM INFORMATION(PRG_INFO)
int i; for(i=0;i<NumPrgInfo;i++){ PRG_INFOPrgInfo }	PROGRAM INFORMATION TABLE

FIG. 31B

PROGRAM INFORMATION 1310

FIELD NAME	CONTENTS
const unsigned int(16) DataType	TYPE OF PRG_INFO(FIXED VALUE)
unsigned int(16) DataSize	SIZE OF PRG_INFO
unsigned int(16) Attributes	ATTRIBUTE INFORMATION OF PROGRAM
OBJ_ID PrgID	IDENTIFYING INFORMATION OF PROGRAM
unsigned int(32) PlayBackDuration	PLAYBACK TIME LENGTH OF PROGRAM(ms)
unsigned int(16) TextID	REFERENCE INFORMATION TO REFERENCE TO TEXT INFORMATION
unsigned int(16) ThumID	REFERENCE INFORMATION TO REFERENCE TO REPRESENTATIVE THUMBNAIL IMAGE INFORMATION
unsigned int(16) NumMoInfo	NUMBER OF SETS OF MEDIA OBJECT INFORMATION (MO_INFO) INCLUDED IN THIS PROGRAM
int i; for(i=0;i<NumMoInfo;i++){ unsigned int(32) MoID }	REFERENCE TABLE TO REFERENCE TO MEDIA OBJECT INFORMATION

FIG. 32

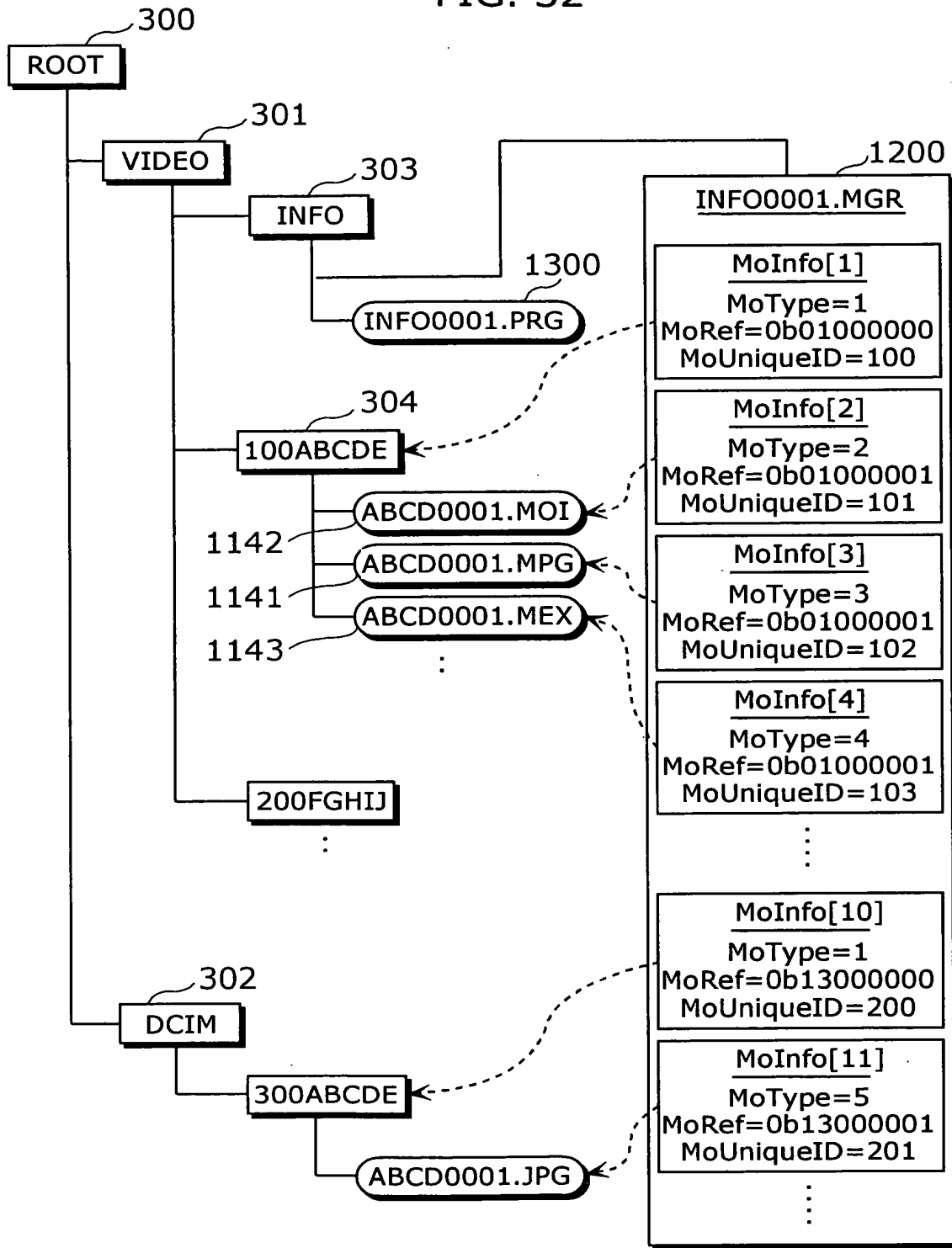


FIG. 33

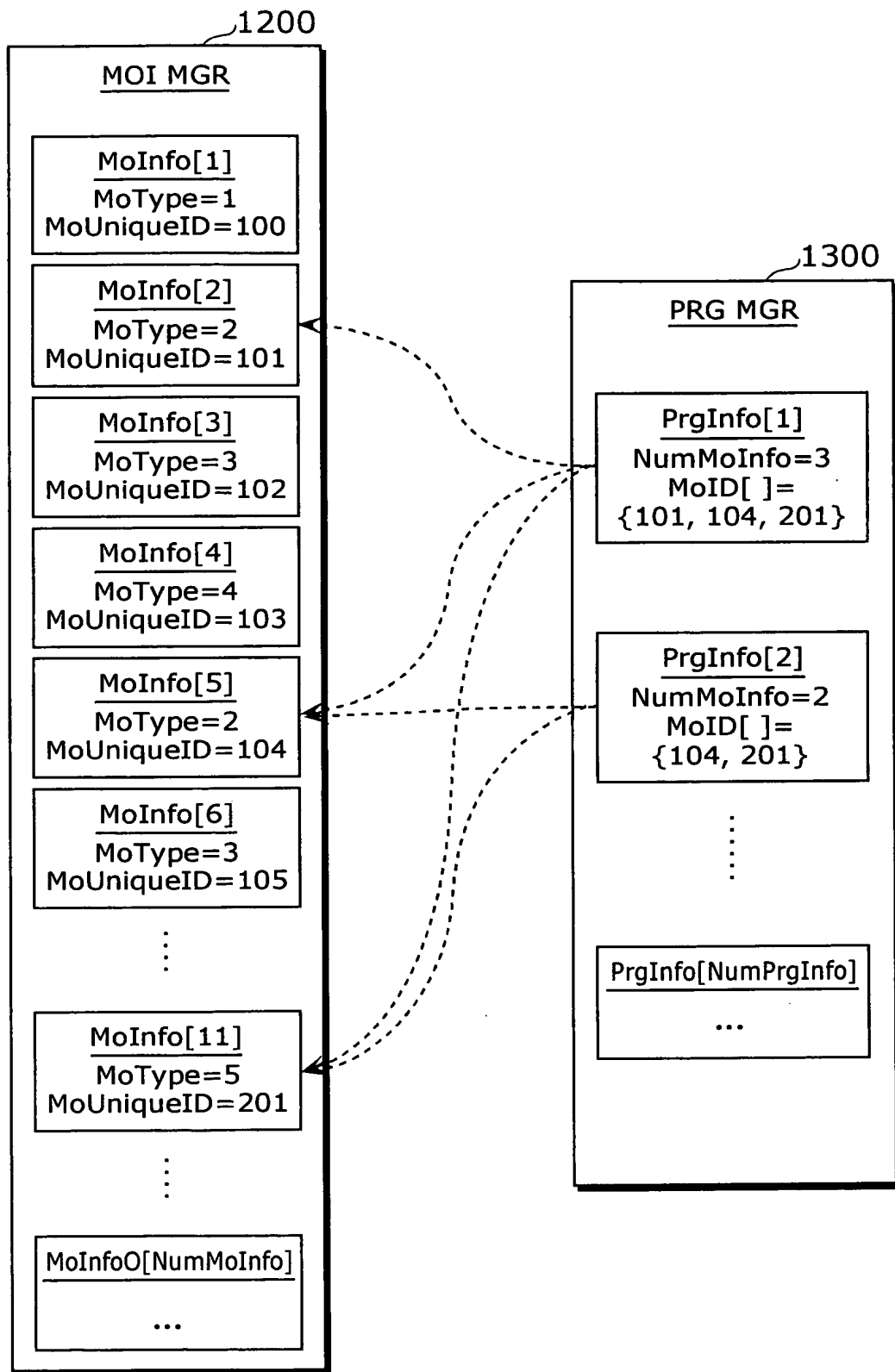


FIG. 34A

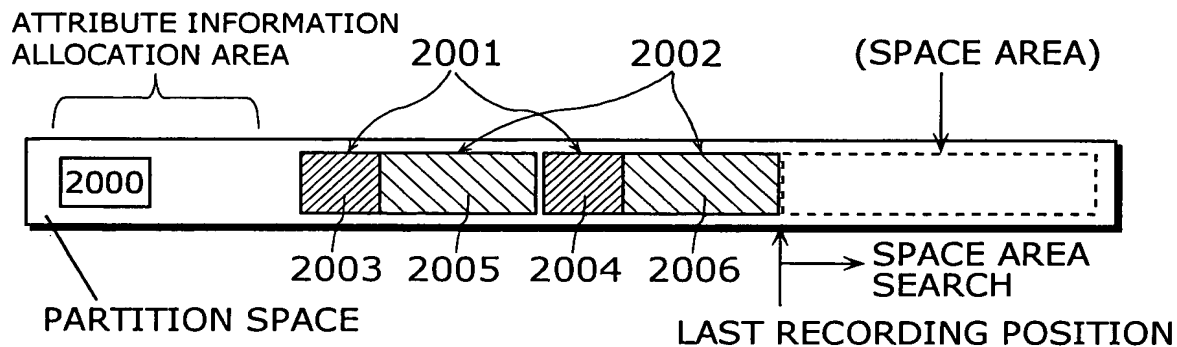


FIG. 34B

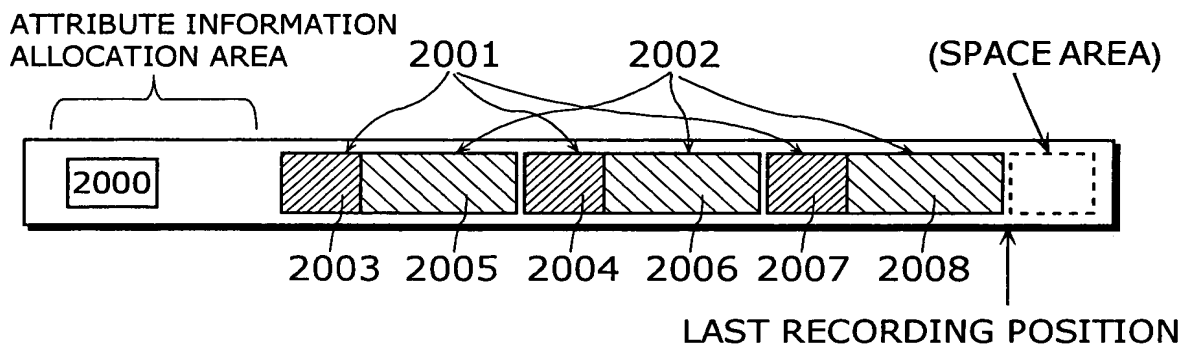


FIG. 34C

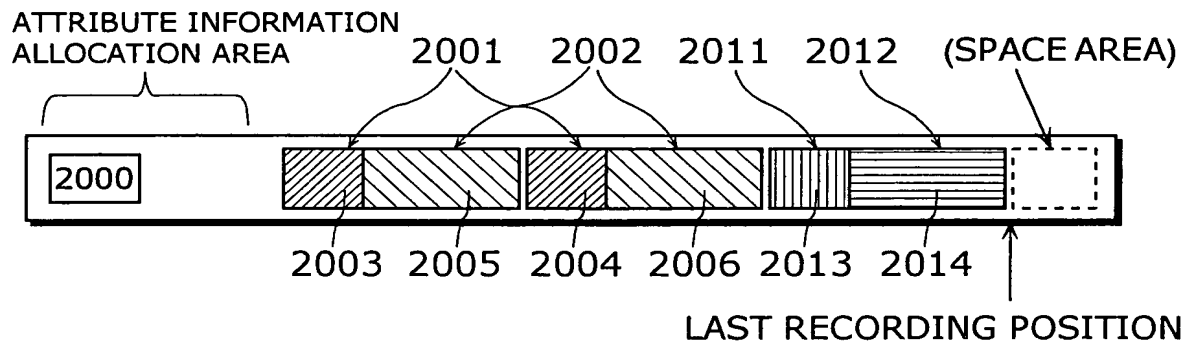


FIG. 35

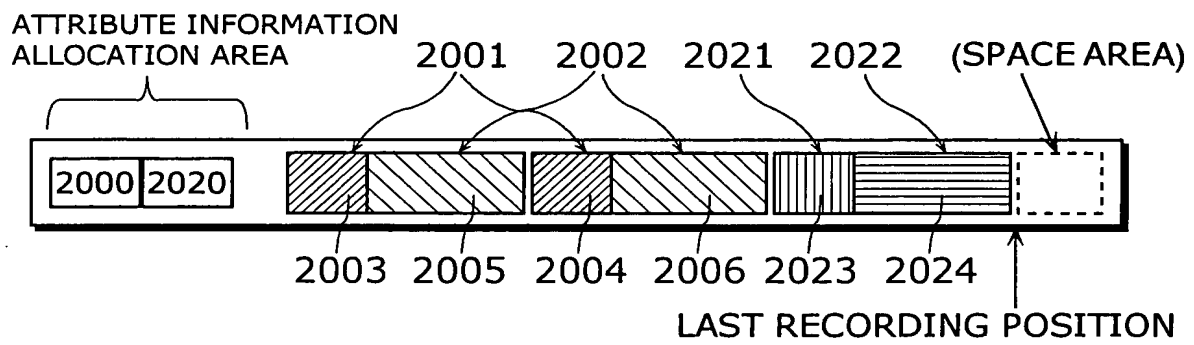


FIG. 36

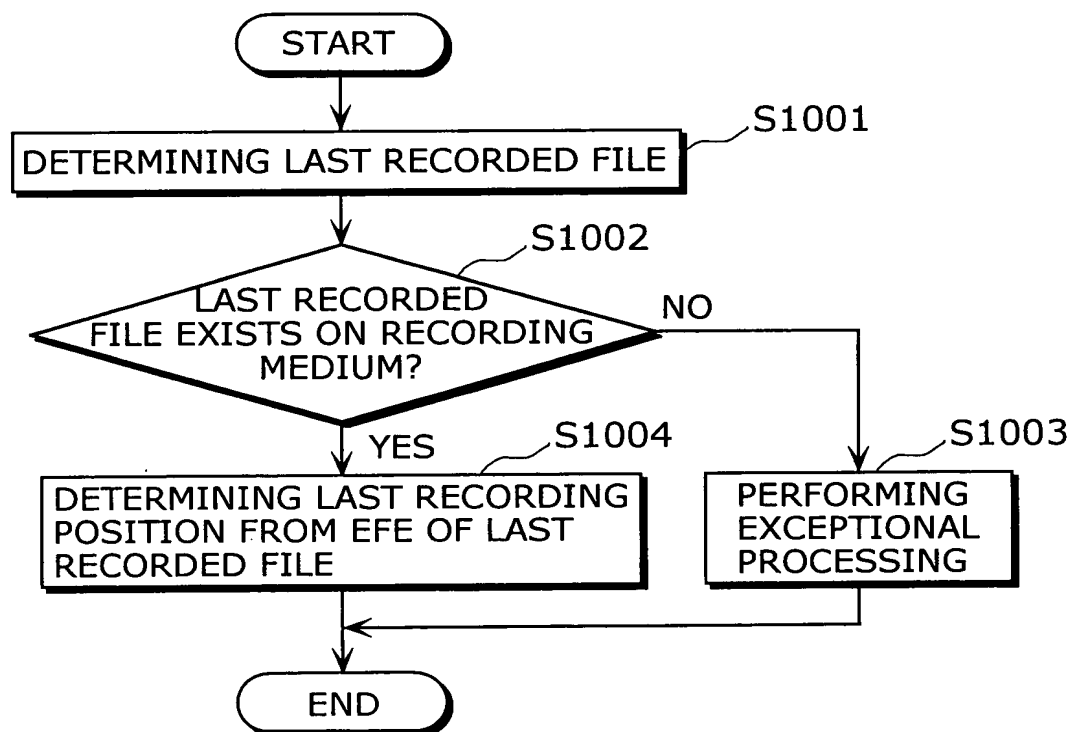


FIG. 37

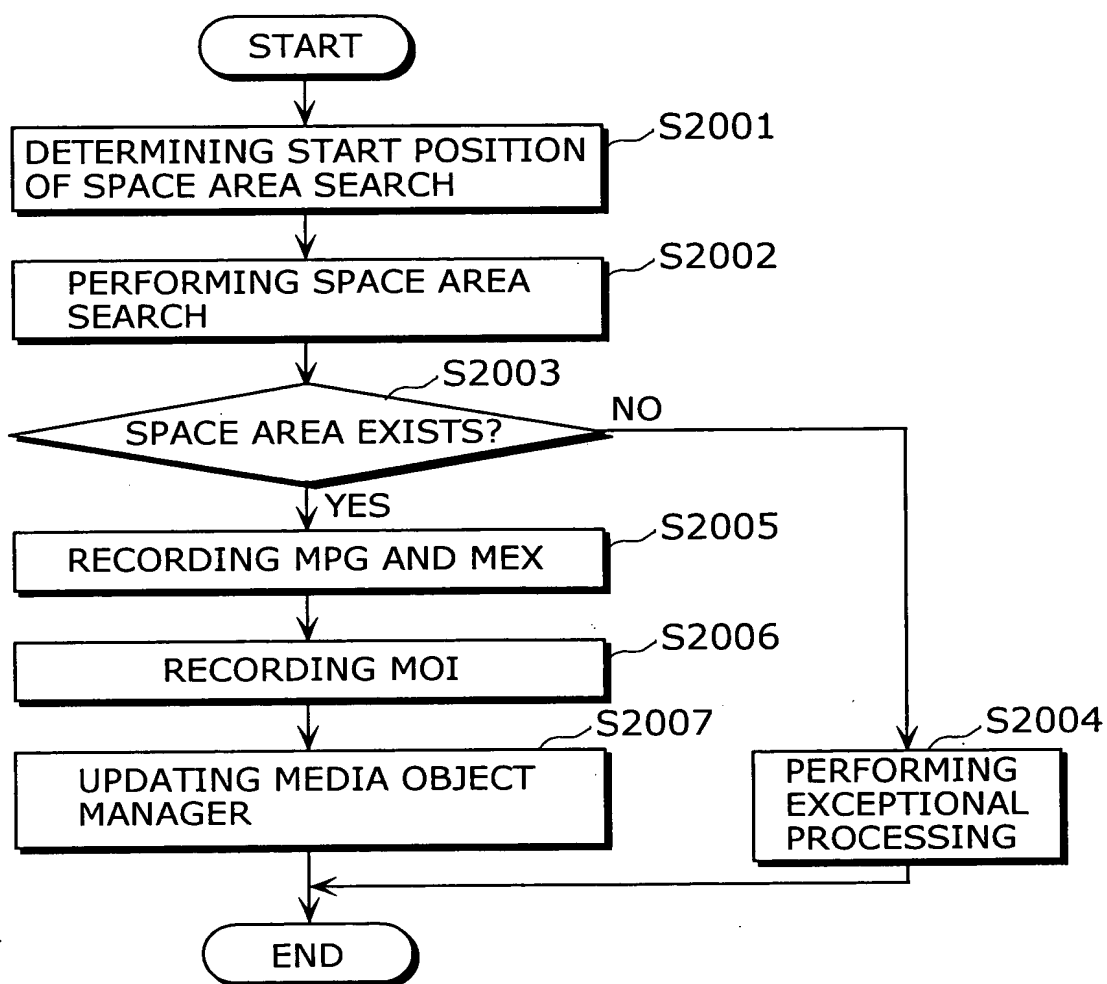


FIG. 38A

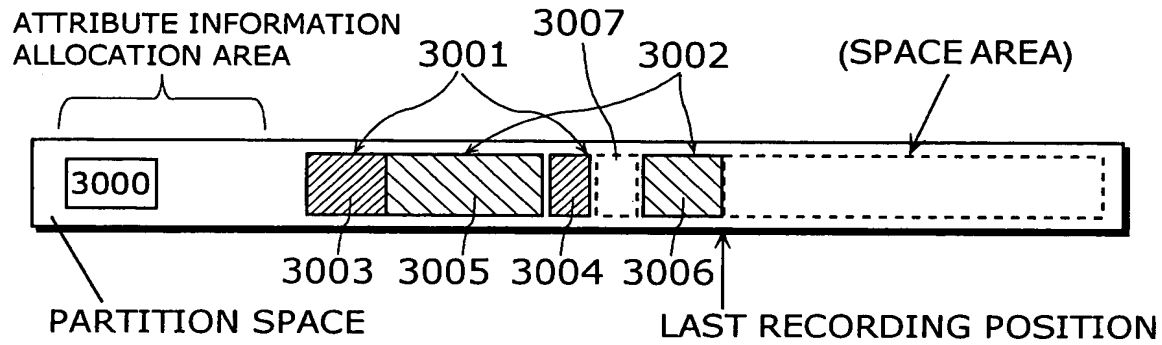


FIG. 38B

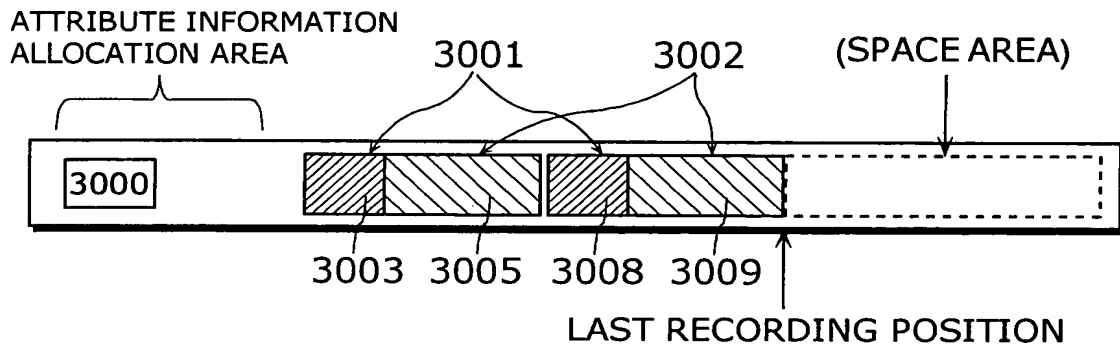


FIG. 38C

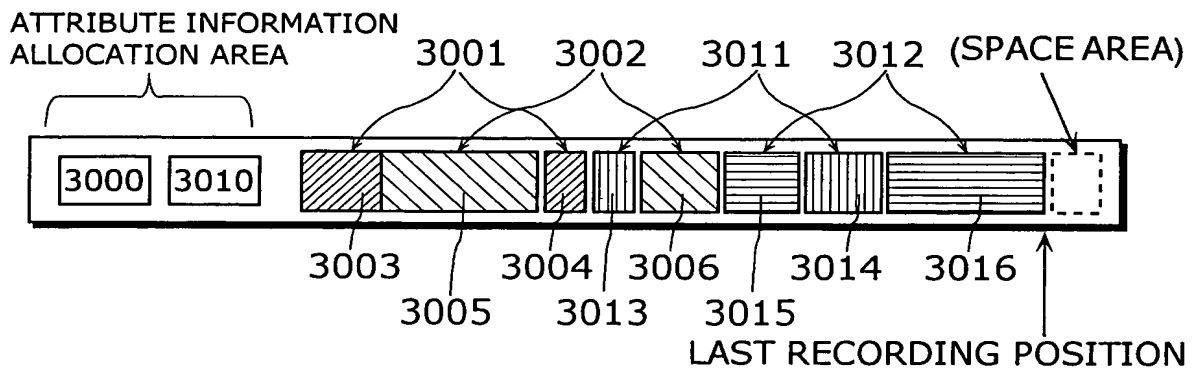


FIG. 39

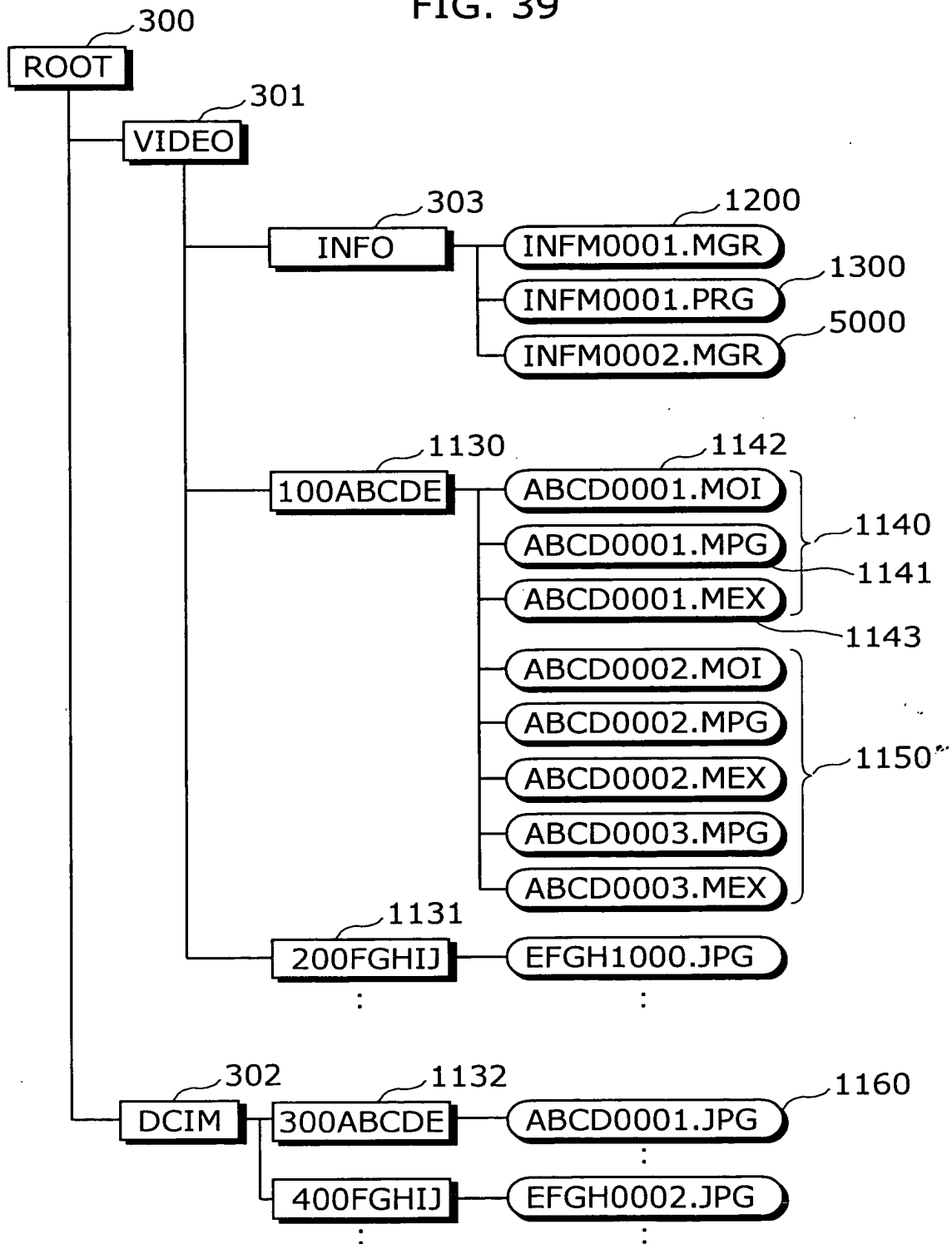


FIG. 40A

Implementation Use Extended Attribute		
BP	LENGTH	FIELD NAME CONTENTS
0	4	Attribute Type LB32=2048
4	1	Attribute Subtype Uint8=1
5	3	Reserved 00hy bytes
8	4	Attribute Length LB32
12	4	Implementation Use Length(IU_L) LB32
16	32	Implementation Identifier EntityID
48	IU_L	Implementation Use ~6000 bytes

FIG. 40B

Media Object Management Information of Implementation Use field		
BP	LENGTH	FIELD NAME CONTENTS
0	2	Header Checksum LB16
0	16	ResumeMark ~6100 RESUME_MARK